

AMENDMENTS TO THE CLAIMS

1. (Previously presented) A platform, comprising:
 - a) a surface;
 - b) a coating film coating at least part of said surface;
 - c) a channel structure;wherein said coating film defines in part said channel structure;
wherein said coating film forms in part said channel structure;
wherein said platform comprises a microchip;
wherein said coating film comprises a material and particulate particles that are heterogeneous with said material, said particles being wholly imbedded or partially imbedded within said material of said coating film.
2. (Original) The platform of claim 1, wherein said surface comprises at least in part silica, glass, quartz, fused silica, polymer, plastic, metal, metal oxide, PTFE, polysilicon, silicon nitride, ceramic, composite or carbon.
3. (Original) The platform of claim 1, wherein said surface comprises a magnetic element, an electromagnetic element, an acoustic element or a dielectric element.
4. (Original) The platform of claim 1, wherein said surface is between about 10 micrometers and about 20 centimeters in length or width.
5. (Original) The platform of claim 1, wherein said surface is between about 0.1 micrometers and about 10 centimeters in thickness.
6. (Original) The platform of claim 1, wherein said coating film comprises a polymer, homopolymer, copolymer, cross-linked polymer, partially polymerized polymer or a cross-linked polymer network.
7. (Original) The platform of claim 1, wherein said coating film comprises a hydrophobic polymer or a hydrophilic polymer.

8. (Original) The platform of claim 1, wherein said coating film comprises at least in part polyethyleneglycol, polyurethanes, polyacrylates, polyacrylamides, polymethylacrylamide, polyvinyl alcohol, polyvinylpyrrolidone, polyamino acids, polysaccharides and polysiloxanes.

9. (Original) The platform of claim 1, wherein said coating film is biocompatible.

10. (Original) The platform of claim 1, wherein said coating film is between about 10 micrometers and about 20 centimeters in length or width.

11. (Original) The platform of claim 1, wherein said coating film is between about 0.1 micrometers and about 10 millimeters in thickness.

12. (Original) The platform of claim 1, wherein said coating film comprises at least in part a biological group.

13. (Original) The platform of claim 12, wherein said biological group comprises at least in part a biomolecule, polypeptide, antibody, receptor, protein, nucleic acid, small molecule, carbohydrate, lipid or combinations thereof.

14. (Original) The platform of claim 12, wherein said biological group interacts with a biological moiety or chemical moiety by electrostatic interactions, ionic interactions, hydrogen bonding or hydrophobic interactions.

15. (Original) The platform of claim 12, wherein said biological group interacts with a biological moiety by nucleic acid - nucleic acid interactions, nucleic acid - protein interactions, antigen - antibody interactions, receptor - ligand interactions or protein - small molecule interactions.

16. (Original) The platform of claim 12, wherein said biological group is present substantially throughout said coating film or on the surface of said coating film.

17. (Original) The platform of claim 1, wherein said coating film comprises at least in part a chemical group.

18. (Original) The platform of claim 17, wherein said chemical group comprises at least in part an alkyl group, a charged group, a positively charged group, a negatively charged group, small molecules or combinations thereof.

19. (Original) The platform of claim 17, wherein said chemical group interacts with a chemical moiety or biological moiety by electrostatic interactions, ionic interactions, hydrogen bonding, hydrophobic interactions or covalent linking.

20. (Original) The platform of claim 17, wherein said chemical group is present substantially throughout said coating film or on the surface of said coating film.

21. (Currently amended) The platform of claim 1, wherein said particulate particle is wholly imbedded within said coating film.

22. (Previously presented) The platform of claim 21, wherein said particulate particles comprise between about 0.1% and about 99.9% volume/ volume of said polymer coating.

23. (Previously presented) The platform of claim 21, wherein said particulate particles comprise at least in part glass, silica, quartz, fused silica, polymer, metal oxide, polystyrene, PMMA, plastic, polysaccharides or polyimide.

24. (Previously presented) The platform of claim 21, wherein said particulate particle size, on average, is between about 0.05 micrometers and about 500 micrometers.

25. (Previously presented) The platform of claim 21, wherein said particulate particles are biocompatible.

26. (Previously presented) The platform of claim 21, wherein said particulate particles comprise at least in part a biological group.

27. (Previously presented) The platform of claim 21, wherein said particulate particles comprises at least in part a chemical group.

28. (Original) The platform of claim 1, wherein said channel structure comprises open channels or closed channels.

29. (Original) The platform of claim 1, wherein at least a portion of said channel structure is defined by said surface or a covering structure.

30. (Canceled)

31. (Original) The platform of claim 1, wherein at least a portion of said channel structure is defined by selective polymerization of said coating film.

32. (Previously presented) The platform of claim 1, wherein said channel structure forms at least one island.

33. (Original) The platform of claim 1, wherein said channel structure has a shape in cross section that is substantially square, oval, crescent, half-circle or rectangular.

34. (Original) The platform of claim 1, wherein said channel structure is linear, circular, coiled, curved, saw-toothed or switchback along at least a portion of its length.

35. (Previously presented) The platform of claim 1, further comprising a magnetic element, an electromagnetic element, an acoustic element or a dielectric element on or within said platform, said surface, or said coating film.

36 – 94. (Canceled)